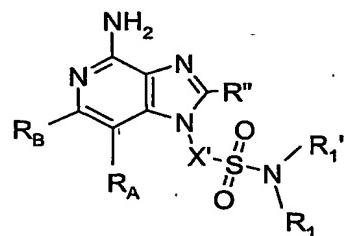


WHAT IS CLAIMED IS:

1. A compound of the formula (I):



(I)

5 wherein:

X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and -CH(R₉)-alkenylene-; wherein the alkylene and alkenylene are optionally interrupted with one or more -O- groups;

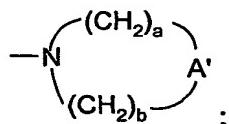
R₁ and R₁' are independently selected from the group consisting of:

- 10 hydrogen,
- alkyl,
- alkenyl,
- aryl,
- arylalkylenyl,
- 15 heteroaryl,
- heteroarylalkylenyl,
- heterocyclyl,
- heterocyclalkylenyl, and
- alkyl, alkenyl, aryl, arylalkylenyl, heteroaryl, heteroarylalkylenyl,
- 20 heterocyclyl, or heterocyclalkylenyl, substituted by one or more substituents selected from the group consisting of:
- hydroxy,
- alkyl,
- haloalkyl,
- 25 hydroxyalkyl,
- alkoxy,
- haloalkoxy,
- halogen,

cyano,
nitro,
arylsulfonyl,
alkylsulfonyl, and
-N(R₉)₂,

5

or R₁ and R_{1'} can join together to form a ring of the formula:



A' is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, -N(R₄)-, and -N(Q-R₄)-;

10

a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7;

Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-,

-S(O)₂-, -C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;

W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂-;

15

R₄ is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected

20

from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, oxo;

25

R₆ is selected from the group consisting of =O and =S;

R₈ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;

R₉ is selected from the group consisting of hydrogen and alkyl;

R'' is hydrogen or a non-interfering substituent;

30

R_A and R_B are independently selected from the group consisting of:

hydrogen,

halogen,

alkyl,

alkenyl,

alkoxy,

alkylthio, and

-N(R₉)₂;

5

or R_A and R_B taken together form either a fused aryl ring that is unsubstituted or substituted by one or more R_a groups, or a fused 5 to 7 membered saturated ring that is unsubstituted or substituted by one or more R_c groups;

10

or R_A and R_B taken together form a fused heteroaryl or 5 to 7 membered saturated ring, containing one heteroatom selected from the group consisting of N and S, wherein the heteroaryl ring is unsubstituted or substituted by one or more R_b groups, and the 5 to 7 membered saturated ring is unsubstituted or substituted by one or more R_c groups;

15

R_a is selected from the group consisting of:

fluoro,

alkyl,

haloalkyl,

alkoxy, and

-N(R₉)₂;

20

R_b is selected from the group consisting of:

halogen,

hydroxy,

alkyl,

alkenyl,

haloalkyl,

alkoxy, and

-N(R₉)₂; and

25

R_c is selected from the group consisting of:

30

halogen,

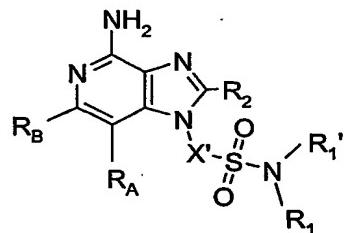
hydroxy,

alkyl,

alkenyl,
haloalkyl,
alkoxy,
alkylthio, and
5 -N(R₉)₂;

or a pharmaceutically acceptable salt thereof.

2. A compound of the formula (Ia):



10 (Ia)

wherein:

X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and -CH(R₉)-alkenylene; wherein the alkylene and alkenylene are optionally interrupted with one or more -O- groups;

15 R₁ and R₁' are independently selected from the group consisting of:

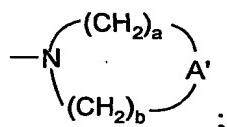
hydrogen,
alkyl,
alkenyl,
aryl,
20 arylalkylenyl,
heteroaryl,
heteroarylalkylenyl,
heterocyclyl,
heterocyclylalkylenyl, and

25 alkyl, alkenyl, aryl, arylalkylenyl, heteroaryl, heteroarylalkylenyl, heterocyclyl, or heterocyclylalkylenyl, substituted by one or more substituents selected from the group consisting of:

hydroxy,

alkyl,
haloalkyl,
hydroxyalkyl,
alkoxy,
5 haloalkoxy,
 halogen,
 cyano,
 nitro,
 arylsulfonyl,
10 alkylsulfonyl, and
 -N(R₉)₂,

or R₁ and R_{1'} can join together to form a ring of the formula:



R₂ is selected from the group consisting of:

15 -R₄,
 -X-R₄,
 -X-Y-R₄, and
 -X- R₅;

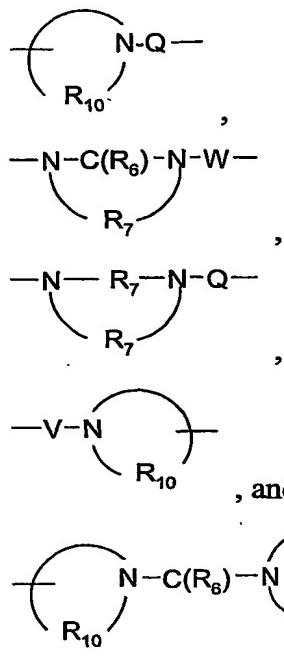
X is selected from the group consisting of alkylene, alkenylene, alkynylene,
20 arylene, heteroarylene, and heterocyclene, wherein the alkylene, alkenylene, and
 alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene,
 or heterocyclene, and optionally interrupted by one or more -O- groups;

Y is selected from the group consisting of:

-O-,
25 -S(O)₀₋₂₋,
 -S(O)₂-N(R₈)-,
 -C(R₆)-,
 -C(R₆)-O-,
 -O-C(R₆)-,
 -O-C(O)-O-,
30

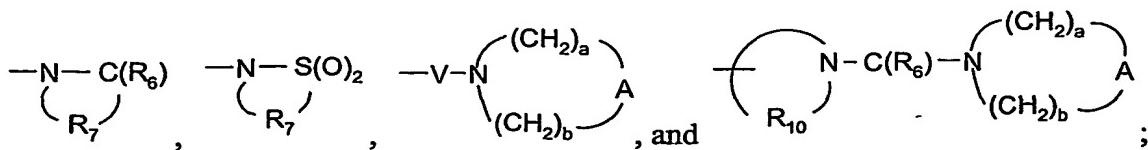
$\text{-N}(\text{R}_8)\text{-Q-}$,
 $\text{-C}(\text{R}_6)\text{-N}(\text{R}_8)\text{-}$,
 $\text{-O-C}(\text{R}_6)\text{-N}(\text{R}_8)\text{-}$,
 $\text{-C}(\text{R}_6)\text{-N}(\text{OR}_9)\text{-}$,

5



10 R_4 is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, 15 oxo;
 15
 20

R_5 is selected from the group consisting of:



R₆ is selected from the group consisting of =O and =S;

R₇ is C₂₋₇ alkylene;

R₈ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;

5 R₉ is selected from the group consisting of hydrogen and alkyl;

R₁₀ is C₃₋₈ alkylene;

A is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, and -N(R₄)-;

A' is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, -N(R₄)-, and -N(Q-R₄)-;

10 Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-, -S(O)₂-, -C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;

V is selected from the group consisting of -C(R₆)-, -O-C(R₆)-, -N(R₈)-C(R₆)-, and -S(O)₂-,

15 W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂-,
a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7;
R_A and R_B are independently selected from the group consisting of:

hydrogen,

halogen,

20 alkyl,

alkenyl,

alkoxy,

alkylthio, and

-N(R₉)₂;

25 or R_A and R_B taken together form either a fused aryl ring that is unsubstituted or substituted by one or more R_a groups, or a fused 5 to 7 membered saturated ring that is unsubstituted or substituted by one or more R_c groups;

or R_A and R_B taken together form a fused heteroaryl or 5 to 7 membered saturated ring, containing one heteroatom selected from the group consisting of N and S, wherein

30 the heteroaryl ring is unsubstituted or substituted by one or more R_b groups, and the 5 to 7 membered saturated ring is unsubstituted or substituted by one or more R_c groups;

R_a is selected from the group consisting of:

fluoro,
alkyl,
haloalkyl,
alkoxy, and
5 -N(R₉)₂;

R_b is selected from the group consisting of:

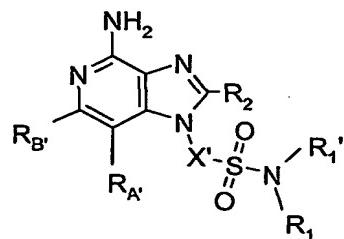
halogen,
hydroxy,
alkyl,
10 alkenyl,
haloalkyl,
alkoxy, and
-N(R₉)₂; and

R_c is selected from the group consisting of:

15 halogen,
hydroxy,
alkyl,
alkenyl,
haloalkyl,
20 alkoxy,
alkylthio, and
-N(R₉)₂;

or a pharmaceutically acceptable salt thereof.

25 3. A compound of the formula (Ib):



Ib

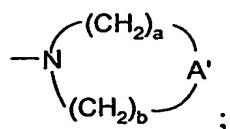
wherein:

X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and -CH(R₉)-alkenylene-; wherein the alkylene and alkenylene are optionally interrupted with one or more -O- groups;

R₁ and R_{1'} are independently selected from the group consisting of:

- 5 hydrogen,
- alkyl,
- alkenyl,
- aryl,
- arylalkylenyl,
- 10 heteroaryl,
- heteroarylalkylenyl,
- heterocyclyl,
- heterocyclylalkylenyl, and
- alkyl, alkenyl, aryl, arylalkylenyl, heteroaryl, heteroarylalkylenyl,
- 15 heterocyclyl, or heterocyclylalkylenyl, substituted by one or more substituents selected from the group consisting of:
- hydroxy,
- alkyl,
- haloalkyl,
- 20 hydroxyalkyl,
- alkoxy,
- haloalkoxy,
- halogen,
- cyano,
- 25 nitro,
- arylsulfonyl,
- alkylsulfonyl, and
- N(R₉)₂,

or R₁ and R_{1'} can join together to form a ring of the formula:



R_2 is selected from the group consisting of:

- R_4 ,
- $X-R_4$,
- $X-Y-R_4$, and
- $X-R_5$;

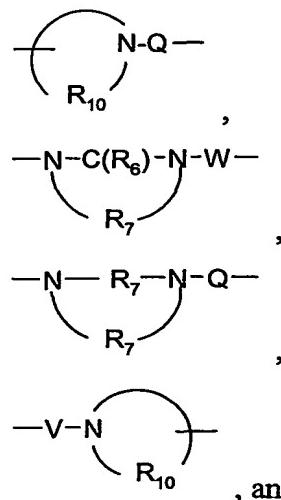
5

X is selected from the group consisting of alkylene, alkenylene, alkynylene, arylene, heteroarylene, and heterocyclene, wherein the alkylene, alkenylene, and alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene, or heterocyclene, and optionally interrupted by one or more -O- groups;

10 Y is selected from the group consisting of:

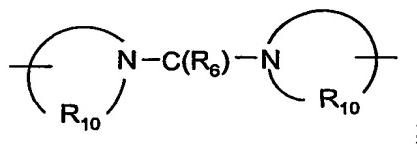
- O-,
- S(O)₀₋₂₋,
- S(O)₂-N(R_8)-,
- C(R_6)-,
- C(R_6)-O-,
- O-C(R_6)-,
- O-C(O)-O-,
- N(R_8)-Q-,
- C(R_6)-N(R_8)-,
- O-C(R_6)-N(R_8)-,
- C(R_6)-N(OR₉)-,

15



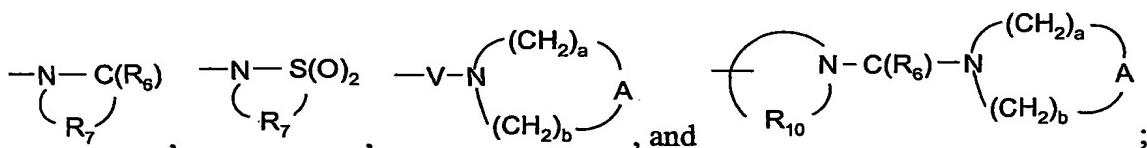
20

25 , and



R₄ is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, oxo;

10 R₅ is selected from the group consisting of:



15 R₆ is selected from the group consisting of =O and =S;

 R₇ is C₂₋₇ alkylene;

 R₈ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;

 R₉ is selected from the group consisting of hydrogen and alkyl;

20 R₁₀ is C₃₋₈ alkylene;

 A is selected from the group consisting of -O-, -C(O)-, -CH₂-,-S(O)₀₋₂-, and -N(R₄)-;

 A' is selected from the group consisting of -O-, -C(O)-, -CH₂-,-S(O)₀₋₂-, -N(R₄)-, and -N(Q-R₄)-;

25 Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-, -S(O)₂-, -C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;

 V is selected from the group consisting of -C(R₆)-, -O-C(R₆)-, -N(R₈)-C(R₆)-, and -S(O)₂-;

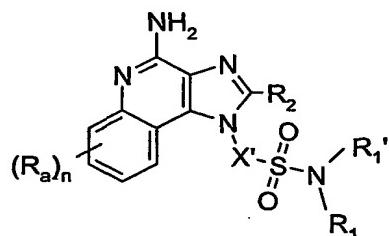
W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂-;
 a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7;
 and

R_{A'} and R_{B'} are independently selected from the group consisting of:

- 5 hydrogen,
- halogen,
- alkyl,
- alkenyl,
- alkoxy,
- 10 alkylthio, and
- N(R₉)₂;

or a pharmaceutically acceptable salt thereof.

4. A compound of the formula (II):



(II)

wherein:

X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and -CH(R₉)-alkenylene-; wherein the alkylene and alkenylene are optionally interrupted with one or more -O- groups;

R₁ and R_{1'} are independently selected from the group consisting of:

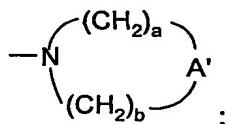
- hydrogen,
- alkyl,
- alkenyl,
- aryl,
- arylalkylene,
- heteroaryl,
- heteroarylalkylene,

25

heterocyclyl,
 heterocyclylalkylenyl, and
 alkyl, alkenyl, aryl, arylalkylenyl, heteroaryl, heteroarylalkylenyl,
 heterocyclyl, or heterocyclylalkylenyl, substituted by one or more substituents
 selected from the group consisting of:

- 5 hydroxy,
- alkyl,
- haloalkyl,
- hydroxyalkyl,
- 10 alkoxy,
- haloalkoxy,
- halogen,
- cyano,
- nitro,
- 15 arylsulfonyl,
- alkylsulfonyl, and
- N(R₉)₂,

or R₁ and R_{1'} can join together to form a ring of the formula:

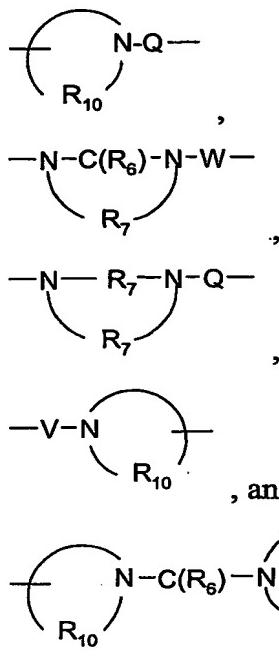


- 20 R₂ is selected from the group consisting of:
 - R₄,
 - X-R₄,
 - X-Y-R₄, and
 - X-R₅;

25 X is selected from the group consisting of alkylene, alkenylene, alkynylene, arylene, heteroarylene, and heterocyclene, wherein the alkylene, alkenylene, and alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene, or heterocyclene, and optionally interrupted by one or more -O- groups;

- Y is selected from the group consisting of:
 - 30 -O-,

-S(O)₀₋₂₋,
 -S(O)₂-N(R₈)-,
 -C(R₆)-,
 -C(R₆)-O-,
 5 -O-C(R₆)-,
 -O-C(O)-O-,
 -N(R₈)-Q-,
 -C(R₆)-N(R₈)-,
 -O-C(R₆)-N(R₈)-,
 10 -C(R₆)-N(OR₉)-,

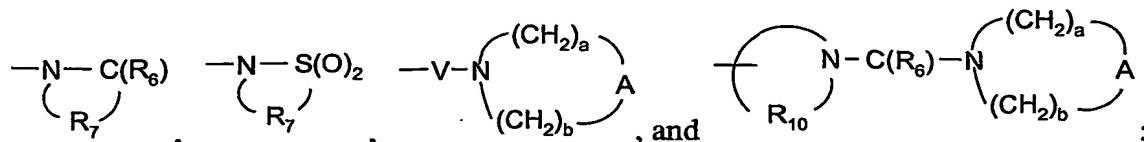


15

R₄ is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino,
 20

(dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, oxo;

R₅ is selected from the group consisting of:



5 R₆ is selected from the group consisting of =O and =S;

R₇ is C₂₋₇ alkylene;

R₈ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;

R₉ is selected from the group consisting of hydrogen and alkyl;

10 R₁₀ is C₃₋₈ alkylene;

A is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, and -N(R₄)-;

A' is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, -N(R₄)-, and -N(Q-R₄)-;

15 Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-, -S(O)₂-, -C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;

V is selected from the group consisting of -C(R₆)-, -O-C(R₆)-, -N(R₈)-C(R₆)-, and -S(O)₂-;

W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂-;

20 a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7 ;

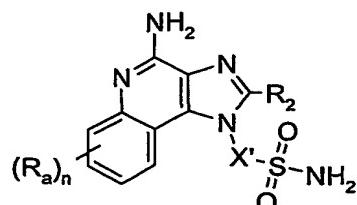
R_a is selected from the group consisting of fluoro, alkyl, haloalkyl, alkoxy, and -N(R₉)₂; and

n is 0 to 4;

or a pharmaceutically acceptable salt thereof.

25

5. A compound of the formula (IIa):



(IIa)

wherein:

- X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and
5 -CH(R₉)-alkenylene-; wherein the alkylene and alkenylene are optionally interrupted with one or more -O- groups;

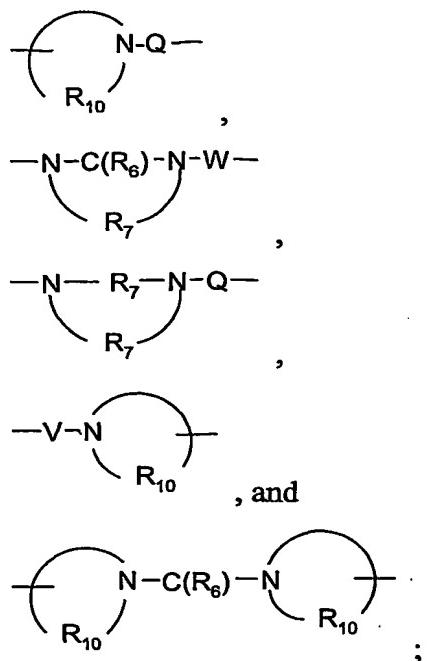
R₂ is selected from the group consisting of:

- R₄,
- X-R₄,
- 10 -X-Y-R₄, and
- X- R₅;

X is selected from the group consisting of alkylene, alkenylene, alkynylene, arylene, heteroarylene, and heterocyclene, wherein the alkylene, alkenylene, and alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene, 15 or heterocyclene, and optionally interrupted by one or more -O- groups;

Y is selected from the group consisting of:

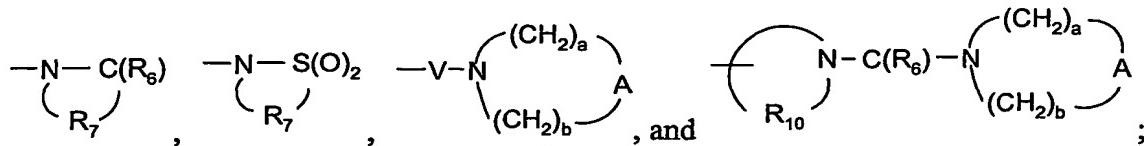
- O-,
- S(O)₀₋₂-,
- S(O)₂-N(R₈)-,
- 20 -C(R₆)-,
- C(R₆)-O-,
- O-C(R₆)-,
- O-C(O)-O-,
- N(R₈)-Q-,
- 25 -C(R₆)-N(R₈)-,
- O-C(R₆)-N(R₈)-,
- C(R₆)-N(OR₉)-,



5

R_4 is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, oxo;

R_5 is selected from the group consisting of:



20

R_6 is selected from the group consisting of =O and =S;

R_7 is C_{2-7} alkylene;

R_8 is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;

R₉ is selected from the group consisting of hydrogen and alkyl;

R₁₀ is C₃₋₈ alkylene;

A is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂₋, and -N(R₄)-;

5 Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-, -S(O)₂₋, -C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;

V is selected from the group consisting of -C(R₆)-, -O-C(R₆)-, -N(R₈)-C(R₆)-, and -S(O)₂₋;

W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂₋;

10 a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7;

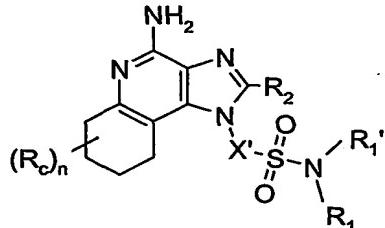
R_a is selected from the group consisting of fluoro, alkyl, haloalkyl, alkoxy, and -N(R₉)₂; and

n is 0 to 4;

or a pharmaceutically acceptable salt thereof.

15

6. A compound of the formula (III):



(III)

wherein:

20 X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and -CH(R₉)-alkenylene-; wherein the alkylene and alkenylene are optionally interrupted with one or more -O- groups;

R₁ and R₁' are independently selected from the group consisting of:

hydrogen,

25 alkyl,

alkenyl,

aryl,

arylalkylenyl,

heteroaryl,

heteroarylalkylenyl,

heterocyclyl,

heterocyclylalkylenyl, and

5 alkyl, alkenyl, aryl, arylalkylenyl, heteroaryl, heteroarylalkylenyl, heterocyclyl, or heterocyclylalkylenyl, substituted by one or more substituents selected from the group consisting of:

hydroxy,

alkyl,

10 haloalkyl,

hydroxyalkyl,

alkoxy,

haloalkoxy,

halogen,

15 cyanو,

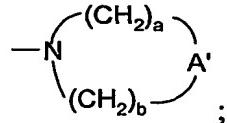
nitro,

arylsulfonyl,

alkylsulfonyl, and

-N(R₉)₂,

20 or R₁ and R_{1'} can join together to form a ring of the formula:



R₂ is selected from the group consisting of:

-R₄,

-X-R₄,

25 -X-Y-R₄, and

-X-R₅;

X is selected from the group consisting of alkylene, alkenylene, alkynylene, arylene, heteroarylene, and heterocyclylene, wherein the alkylene, alkenylene, and alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene, or heterocyclylene, and optionally interrupted by one or more -O- groups;

30

Y is selected from the group consisting of:

-O-,
 -S(O)₀₋₂-,
 -S(O)₂-N(R₈)-,

5 -C(R₆)-,

-C(R₆)-O-,

-O-C(R₆)-,

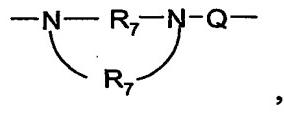
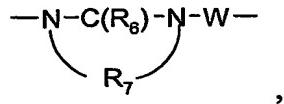
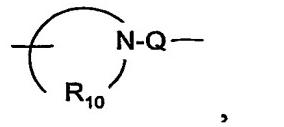
-O-C(O)-O-,

-N(R₈)-Q-,

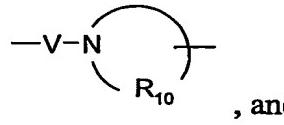
10 -C(R₆)-N(R₈)-,

-O-C(R₆)-N(R₈)-,

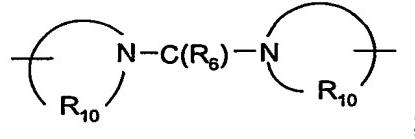
-C(R₆)-N(OR₉)-,



15



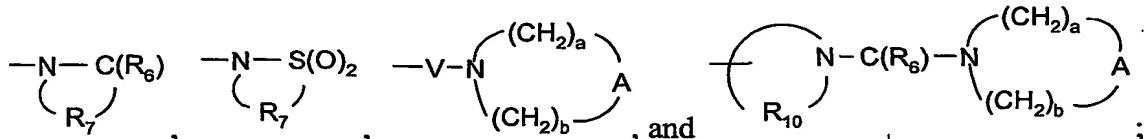
, and



R₄ is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen,

nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, oxo;

5 R₅ is selected from the group consisting of:



R₆ is selected from the group consisting of =O and =S;

R₇ is C₂₋₇ alkylene;

10 R₈ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;

R₉ is selected from the group consisting of hydrogen and alkyl;

R₁₀ is C₃₋₈ alkylene;

A is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂₋, and -N(R₄)-;

15 A' is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂₋, -N(R₄)-, and -N(Q-R₄)-;

Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-, -S(O)₂-, -C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;

20 V is selected from the group consisting of -C(R₆)-, -O-C(R₆)-, -N(R₈)-C(R₆)-, and -S(O)₂-;

W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂-;

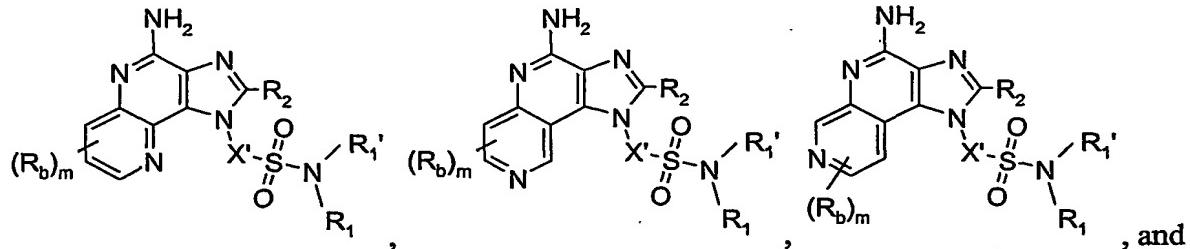
a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7 ;

R_c is selected from the group consisting of halogen, hydroxy, alkyl, alkenyl, haloalkyl, alkoxy, alkylthio, and -N(R₉)₂; and

25 n is 0 to 4;

or a pharmaceutically acceptable salt thereof.

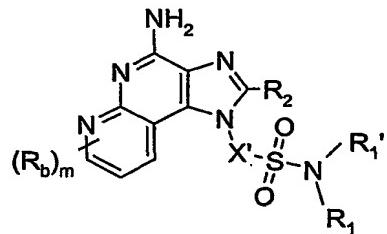
7. A compound selected from the group consisting of formulas (IV, V, VI, and VII):



(IV)

(V)

(VI)



(VII)

5

wherein:

X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and -CH(R₉)-alkenylene; wherein the alkylene and alkenylene are optionally interrupted with one or more -O- groups;

10 R₁ and R_{1'} are independently selected from the group consisting of:

hydrogen,

alkyl,

alkenyl,

aryl,

arylalkylene,

heteroaryl,

heteroarylalkylene,

heterocyclyl,

20 heterocyclalkylene, and

alkyl, alkenyl, aryl, arylalkylene, heteroaryl, heteroarylalkylene,

heterocyclyl, or heterocyclalkylene, substituted by one or more substituents selected from the group consisting of:

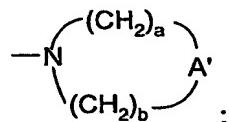
hydroxy,

5

alkyl,
 haloalkyl,
 hydroxyalkyl,
 alkoxy,
 haloalkoxy,
 halogen,
 cyano,
 nitro,
 arylsulfonyl,
 alkylsulfonyl, and
 $-N(R_9)_2$,

10

or R_1 and R_1' can join together to form a ring of the formula:



R_2 is selected from the group consisting of:

15

$-R_4$,
 $-X-R_4$,
 $-X-Y-R_4$, and
 $-X-R_5$;

20

X is selected from the group consisting of alkylene, alkenylene, alkynylene, arylene, heteroarylene, and heterocyclene, wherein the alkylene, alkenylene, and alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene, or heterocyclene, and optionally interrupted by one or more $-O-$ groups;

Y is selected from the group consisting of:

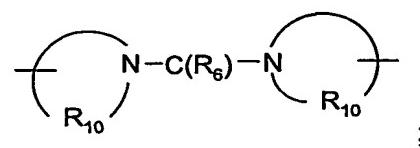
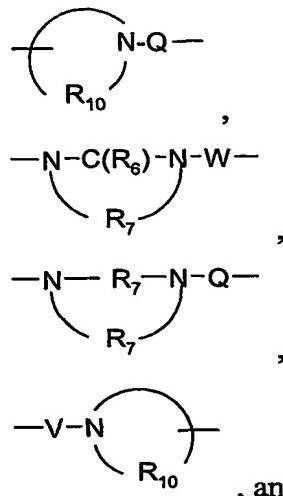
25

$-O-$,
 $-S(O)_{0-2}-$,
 $-S(O)_2-N(R_8)-$,
 $-C(R_6)-$,
 $-C(R_6)-O-$,
 $-O-C(R_6)-$,
 $-O-C(O)-O-$,

30

-N(R₈)-Q-,
 -C(R₆)-N(R₈)-,
 -O-C(R₆)-N(R₈)-,
 -C(R₆)-N(OR₉)-,

5



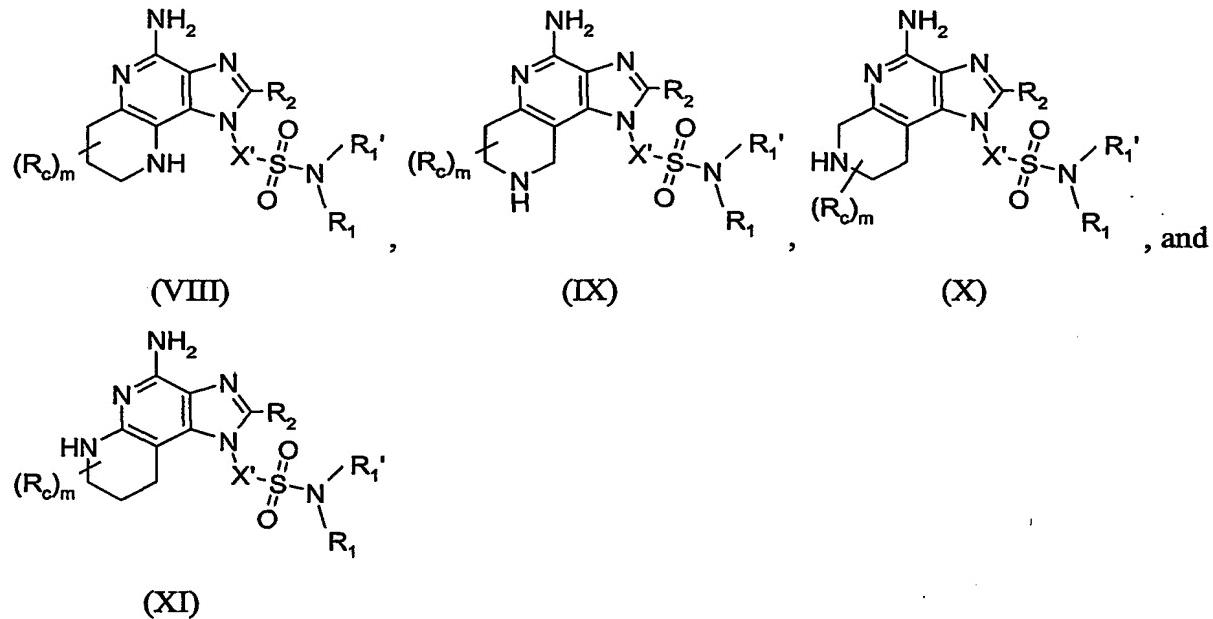
10 R₄ is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, 15 oxo;

15 R₅ is selected from the group consisting of:

20 R₅ is selected from the group consisting of:
 -N-C(R₆)-, -N-S(O)₂-, -V-N-(CH₂)_a-A-(CH₂)_b-, and
 The diagram shows three chemical structures separated by commas. The first is a circle containing a horizontal line with an N atom at each end, labeled R₇ below. The second is a circle containing a horizontal line with an S(O)₂ group at each end. The third is a circle containing a horizontal line with an N atom at each end, labeled A above the line and (CH₂)_a and (CH₂)_b to the left and right respectively. The fourth is a circle with a horizontal line through it, labeled R₁₀ below, followed by a comma. The fifth is a circle containing a horizontal line with two N atoms at the ends, labeled R₁₀ below, followed by a semicolon.

- R₆ is selected from the group consisting of =O and =S;
- R₇ is C₂₋₇ alkylene;
- R₈ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;
- 5 R₉ is selected from the group consisting of hydrogen and alkyl;
- R₁₀ is C₃₋₈ alkylene;
- A is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, and -N(R₄)-;
- A' is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, -N(R₄)-, and -N(Q-R₄)-;
- 10 Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-, -S(O)₂-, -C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;
- V is selected from the group consisting of -C(R₆)-, -O-C(R₆)-, -N(R₈)-C(R₆)-, and -S(O)₂-,
- 15 W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂-,
a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7;
R_b is selected from the group consisting of halogen, hydroxy, alkyl, alkenyl,
haloalkyl, alkoxy, and -N(R₉)₂; and
m is 0 to 3;
- 20 or a pharmaceutically acceptable salt thereof.

8. A compound selected from the group consisting of formulas (VIII, IX, X, and XI):



5 wherein:

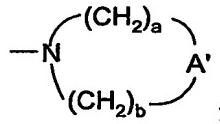
X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and -CH(R₉)-alkenylene; wherein the alkylene and alkenylene are optionally interrupted with one or more -O- groups;

R₁ and R₁' are independently selected from the group consisting of:

- 10 hydrogen,
- alkyl,
- alkenyl,
- aryl,
- arylalkylenyl,
- 15 heteroaryl,
- heteroarylalkylenyl,
- heterocyclyl,
- heterocyclylalkylenyl, and
- alkyl, alkenyl, aryl, arylalkylenyl, heteroaryl, heteroarylalkylenyl,
- 20 heterocyclyl, or heterocyclylalkylenyl, substituted by one or more substituents selected from the group consisting of:
 - hydroxy,
 - alkyl,
 - haloalkyl,

hydroxyalkyl,
 alkoxy,
 haloalkoxy,
 halogen,
 5 cyano,
 nitro,
 arylsulfonyl,
 alkylsulfonyl, and
 $-N(R_9)_2$,

10 or R_1 and R_1' can join together to form a ring of the formula:



R_2 is selected from the group consisting of:

- R_4 ,
- $X-R_4$,
- 15 - $X-Y-R_4$, and
- $X-R_5$;

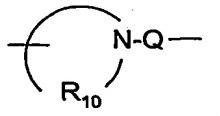
X is selected from the group consisting of alkylene, alkenylene, alkynylene, arylene, heteroarylene, and heterocyclene, wherein the alkylene, alkenylene, and alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene, 20 or heterocyclene, and optionally interrupted by one or more -O- groups;

Y is selected from the group consisting of:

- O-,
- $S(O)_{0-2-}$,
- $S(O)_2-N(R_8)-$,
- 25 - $C(R_6)-$,
- $C(R_6)-O-$,
- $O-C(R_6)-$,
- $O-C(O)-O-$,
- $N(R_8)-Q-$,
- 30 - $C(R_6)-N(R_8)-$,

-O-C(R₆)-N(R₈)-,

$$-\text{C}(\text{R}_6)-\text{N}(\text{OR}_9)-,$$



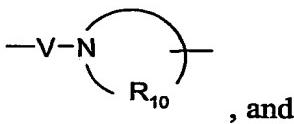
$$-\text{N}-\text{C}(\text{R}_6)-\text{N}-\text{W}-$$

R_7

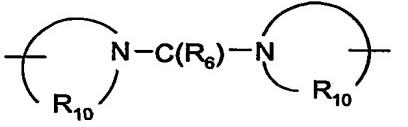
$$-\text{N}-\text{R}_7-\text{N}-\text{Q}-$$

R_7

5



, and



1

R_4 is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl,

10 heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, oxo;

15

R₅ is selected from the group consisting of:

$$\begin{array}{c} \text{---N---C(R}_6\text{)} \\ | \\ \text{R}_7 \end{array}, \quad \begin{array}{c} \text{---N---S(O)}_2 \\ | \\ \text{R}_7 \end{array}, \quad \begin{array}{c} (\text{CH}_2)_a \\ \curvearrowright \\ \text{---V---N---} \\ | \\ (\text{CH}_2)_b \end{array}, \quad \text{and} \quad \begin{array}{c} (\text{CH}_2)_a \\ \curvearrowright \\ \text{---N---C(R}_6\text{)} \\ | \\ \text{R}_{10} \end{array} \quad \begin{array}{c} (\text{CH}_2)_b \\ \curvearrowright \\ \text{---N---} \end{array}$$

R_6 is selected from the group consisting of =O and =S;

R₇ is C₂₋₇ alkylene;

R₈ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;

R₉ is selected from the group consisting of hydrogen and alkyl;

R₁₀ is C₃₋₈ alkylene;

5 A is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂, and -N(R₄)-;

A' is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂, -N(R₄)-, and -N(Q-R₄)-;

10 Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-, -S(O)₂-,-C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;

V is selected from the group consisting of -C(R₆)-, -O-C(R₆)-, -N(R₈)-C(R₆)-, and -S(O)₂-;

W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂-;

a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7;

15 R_c is selected from the group consisting of halogen, hydroxy, alkyl, alkenyl, haloalkyl, alkoxy, alkylthio, and -N(R₉)₂; and

m is 0 to 3;

or a pharmaceutically acceptable salt thereof.

20 9. The compound or salt of claim 1 or claim 2 wherein R_A and R_B are independently selected from the group consisting of hydrogen and C₁₋₄ alkyl.

10. The compound or salt of claim 3 wherein R_{A'} and R_{B'} are independently selected from the group consisting of hydrogen and C₁₋₄ alkyl.

25

11. The compound or salt of claim 7 or claim 8 wherein m is 0.

12. The compound or salt of any one of claims 4, 5, or 6 wherein n is 0.

30 13. The compound or salt of any one of claims 1 through 4, 6 through 11, or claim 12 as dependent on claim 4 or claim 6, wherein R₁ and R_{1'} are independently selected from the group consisting of:

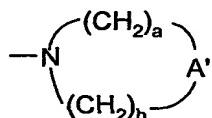
- hydrogen,
alkyl,
alkenyl,
aryl,
5 arylalkylenyl,
heteroaryl,
heteroarylalkylenyl,
heterocyclyl,
heterocyclylalkylenyl, and
10 alkyl, alkenyl, aryl, arylalkylenyl, heteroaryl, heteroarylalkylenyl, heterocyclyl, or
heterocyclylalkylenyl, substituted by one or more substituents selected from the
group consisting of:
hydroxy,
alkyl,
15 haloalkyl,
hydroxyalkyl,
alkoxy,
haloalkoxy,
halogen,
20 cyano,
nitro,
arylsulfonyl,
alkylsulfonyl, and
-N(R₉)₂.
25
14. The compound or salt of claim 13 wherein R₁' is hydrogen or alkyl, and R₁ is
selected from the group consisting of hydrogen, alkyl, aryl, substituted aryl, arylalkylenyl,
substituted arylalkylenyl, and heteroaryl.
- 30 15. The compound or salt of claim 13 wherein R₁' is hydrogen or methyl, and R₁ is
selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, cyclohexyl,

phenyl, 4-methoxyphenyl, benzyl, 4-methoxybenzyl, 2-pyridyl, 3-pyridyl, 4-chlorophenyl, and 4-fluorophenyl.

16. The compound or salt of claim 15 wherein R₁ and R_{1'} are both hydrogen.

5

17. The compound or salt of any one of claims 1 through 4, 6 through 11, or claim 12 as dependent on claim 4 or claim 6, wherein R₁ and R_{1'} join together to form a ring of the formula:



10 wherein A' is selected from the group consisting of -O-, -CH₂-, -N(R₄)-, and -N(Q-R₄)-.

18. The compound or salt of claim 17 wherein R₁ and R_{1'} join together to form a morpholine ring.

15 19. The compound or salt of any one of claims 2 through 8; claim 9 as dependent on claim 2; claims 10 through 12; or claims 13 through 18 as dependent on claims 2 through 4, claims 6 through 11, or claim 12 as dependent on claim 4 or claim 6; wherein R₂ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, hydroxyalkylenyl, and -X-R₄ and -X-Y-R₄, wherein X is C₁₋₂ alkyl; Y is -S(O)₀₋₂-, -S(O)₂-N(R₈)-, -C(R₆)-, -C(R₆)-O-, -O-C(R₆)-, -O-C(O)-O-, -N(R₈)-Q-, -C(R₆)-N(R₈)-, -O-C(R₆)-N(R₈)-, or -C(R₆)-N(OR₉)-; and R₄ is alkyl.

20

20. The compound or salt of claim 19 wherein R₂ is selected from the group consisting of hydrogen, C₁₋₄ alkyl, C₁₋₄ alkyl-O-C₁₋₄ alkylene, and HO-C₁₋₃ alkylene.

25

21. The compound or salt of claim 20 wherein R₂ is selected from the group consisting of hydrogen, methyl, ethyl, n-propyl, n-butyl, hydroxymethyl, 2-hydroxyethyl, ethoxymethyl, and 2-methoxyethyl.

30

22. The compound or salt of any one of claims 1 through 21 wherein X' is

-(CH₂)₂₋₄-O-(CH₂)₂₋₄-.

23. The compound or salt of any one of claims 1 through 21 wherein X' is -(CH₂)₁₋₇-.

5 24. The compound or salt of any one of claims 1 through 21 wherein X' is
-(CH₂)-C(CH₃)₂-.

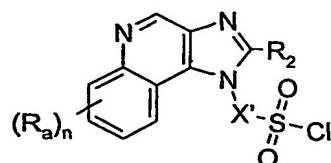
10 25. A pharmaceutical composition comprising a therapeutically effective amount of a compound or salt of any one of claims 1 through 24 in combination with a pharmaceutically acceptable carrier.

15 26. A method of inducing cytokine biosynthesis in an animal comprising administering an effective amount of a compound or salt of any one of claims 1 through 24 or a pharmaceutical composition of claim 25 to the animal.

27. A method of treating a viral disease in an animal in need thereof comprising administering a therapeutically effective amount of a compound or salt of any one of claims 1 through 24 or a pharmaceutical composition of claim 25 to the animal.

20 28. A method of treating a neoplastic disease in an animal in need thereof comprising administering a therapeutically effective amount of a compound or salt of any one of claims 1 through 24 or a pharmaceutical composition of claim 25 to the animal.

25 29. A compound of the formula (XII):



(XII)

wherein:

X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and

-CH(R₉)-alkenylene-; wherein the alkylene and alkenylene are optionally interrupted with one or more -O- groups;

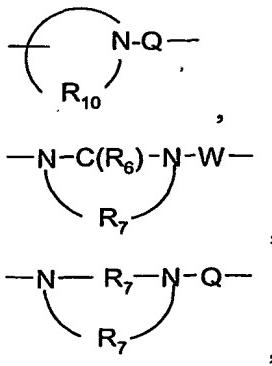
R₂ is selected from the group consisting of:

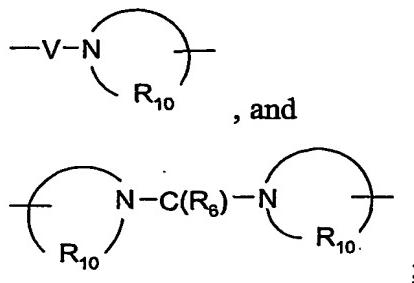
- R₄,
- 5 -X-R₄,
- X-Y-R₄, and
- X- R₅;

X is selected from the group consisting of alkylene, alkenylene, alkynylene, arylene, heteroarylene, and heterocyclene, wherein the alkylene, alkenylene, and 10 alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene, or heterocyclene, and optionally interrupted by one or more -O- groups;

Y is selected from the group consisting of:

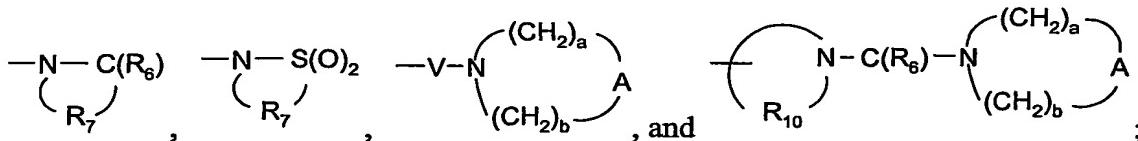
- O-,
- S(O)₀₋₂-,
- 15 -S(O)₂-N(R₈)-,
- C(R₆)-,
- C(R₆)-O-,
- O-C(R₆)-,
- O-C(O)-O-,
- 20 -N(R₈)-Q-,
- C(R₆)-N(R₈)-,
- O-C(R₆)-N(R₈)-,
- C(R₆)-N(OR₉)-,





R₄ is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, oxo;

R₅ is selected from the group consisting of:



R₆ is selected from the group consisting of =O and =S;

R₇ is C₂₋₇ alkylene;

R₈ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;

R₉ is selected from the group consisting of hydrogen and alkyl;

R₁₀ is C₃₋₈ alkylene;

A is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, and -N(R₄)-;

Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-, -S(O)₂-, -C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;

V is selected from the group consisting of -C(R₆)-, -O-C(R₆)-, -N(R₈)-C(R₆)-, and

-S(O)₂-;

W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂-;

a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7;

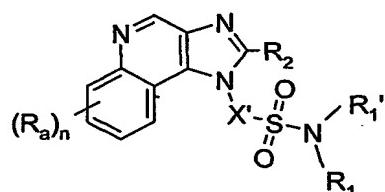
R_a is selected from the group consisting of fluoro, alkyl, haloalkyl, alkoxy, and

5 -N(R₉)₂; and

n is 0 to 4;

or a pharmaceutically acceptable salt thereof.

30. A compound of the formula (XIII):



10

wherein:

X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and
-CH(R₉)-alkenylene-; wherein the alkylene and alkenylene are optionally interrupted with
15 one or more -O- groups;

R₁ and R₁' are independently selected from the group consisting of:

hydrogen,

alkyl,

alkenyl,

aryl,

arylalkylene,

heteroaryl,

heteroarylalkylene,

heterocyclyl,

20 heterocyclalkylene, and

alkyl, alkenyl, aryl, arylalkylene, heteroaryl, heteroarylalkylene,

25 heterocyclyl, or heterocyclalkylene, substituted by one or more substituents selected from the group consisting of:

hydroxy,

alkyl,
haloalkyl,
hydroxyalkyl,

alkoxy,
haloalkoxy,

halogen,

cyano,

nitro,

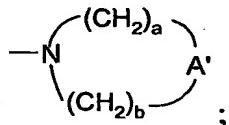
arylsulfonyl,

alkylsulfonyl, and

-N(R₉)₂,

10

or R₁ and R_{1'} can join together to form a ring of the formula:



R₂ is selected from the group consisting of:

15

-R₄,
-X-R₄,
-X-Y-R₄, and
-X- R₅;

20

X is selected from the group consisting of alkylene, alkenylene, alkynylene, arylene, heteroarylene, and heterocyclene, wherein the alkylene, alkenylene, and alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene, or heterocyclene, and optionally interrupted by one or more -O- groups;

Y is selected from the group consisting of:

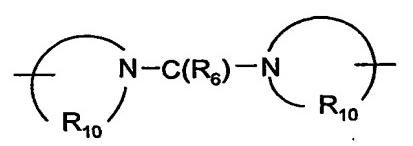
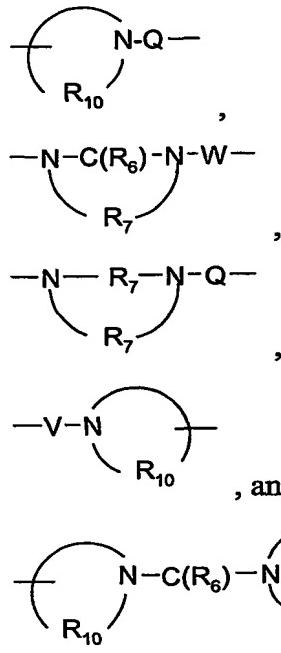
25

-O-,
-S(O)₀₋₂₋,
-S(O)₂-N(R₈)-,
-C(R₆)-,
-C(R₆)-O-,
-O-C(R₆)-,
-O-C(O)-O-,

30

-N(R₈)-Q-,
 -C(R₆)-N(R₈)-,
 -O-C(R₆)-N(R₈)-,
 -C(R₆)-N(OR₉)-,

5

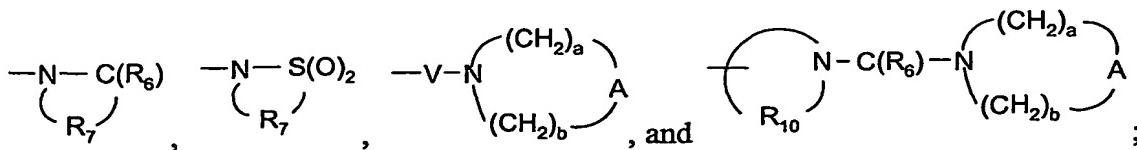


10 R₄ is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, 15 oxo;

15

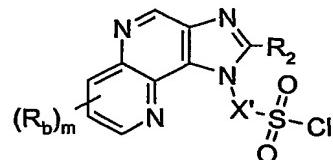
can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, 20 oxo;

R₅ is selected from the group consisting of:



- R₆ is selected from the group consisting of =O and =S;
- R₇ is C₂₋₇ alkylene;
- R₈ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;
- 5 R₉ is selected from the group consisting of hydrogen and alkyl;
- R₁₀ is C₃₋₈ alkylene;
- A is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, and -N(R₄)-;
- A' is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, -N(R₄)-, and -N(Q-R₄)-;
- 10 Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-, -S(O)₂-, -C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;
- V is selected from the group consisting of -C(R₆)-, -O-C(R₆)-, -N(R₈)-C(R₆)-, and -S(O)₂-,
- 15 W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂-,
a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7;
R_a is selected from the group consisting of fluoro, alkyl, haloalkyl, alkoxy, and -N(R₉)₂; and
n is 0 to 4;
- 20 or a pharmaceutically acceptable salt thereof.

31. A compound of the formula (XIV):



(XIV)

25 wherein:

X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and -CH(R₉)-alkenylene-; wherein the alkylene and alkenylene are optionally interrupted with one or more -O- groups;

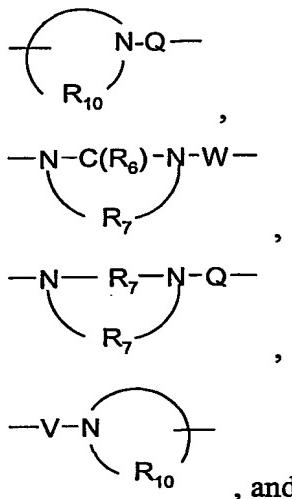
R₂ is selected from the group consisting of:

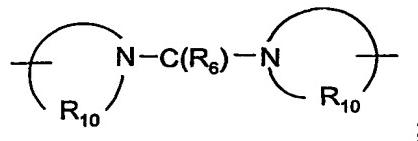
-R₄,
-X-R₄,
-X-Y-R₄, and
-X-R₅;

5 X is selected from the group consisting of alkylene, alkenylene, alkynylene, arylene, heteroarylene, and heterocyclene, wherein the alkylene, alkenylene, and alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene, or heterocyclene, and optionally interrupted by one or more -O- groups;

Y is selected from the group consisting of:

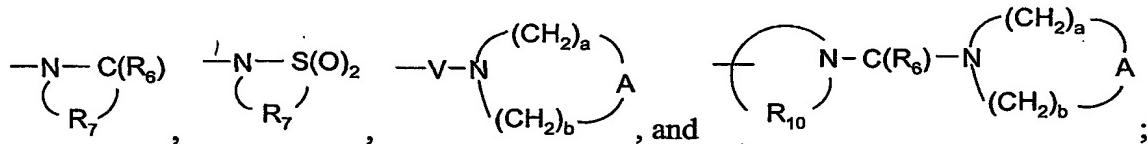
10 -O-,
-S(O)₀₋₂₋,
-S(O)₂-N(R₈)-,
-C(R₆)-,
-C(R₆)-O-,
15 -O-C(R₆)-,
-O-C(O)-O-,
-N(R₈)-Q-,
-C(R₆)-N(R₈)-,
-O-C(R₆)-N(R₈)-,
20 -C(R₆)-N(OR₉)-,





R₄ is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, oxo;

R₅ is selected from the group consisting of:



R₆ is selected from the group consisting of =O and =S;
R₇ is C₂₋₇ alkylene;
R₈ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;

R₉ is selected from the group consisting of hydrogen and alkyl;

R₁₀ is C₃₋₈ alkylene;
A is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, and -N(R₄)-;

Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-, -S(O)₂-, -C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;

V is selected from the group consisting of -C(R₆)-, -O-C(R₆)-, -N(R₈)-C(R₆)-, and -S(O)₂-;

W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂-;

a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7;

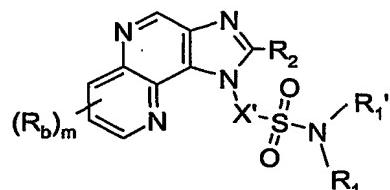
R_b is selected from the group consisting of halogen, hydroxy, alkyl, alkenyl, haloalkyl, alkoxy, and $-N(R_9)_2$; and

m is 0 to 3;

or a pharmaceutically acceptable salt thereof.

5

32. A compound of the formula (XV):



(XV)

wherein:

10 X' is selected from the group consisting of $-CH(R_9)-$, $-CH(R_9)$ -alkylene, and $-CH(R_9)$ -alkenylene; wherein the alkylene and alkenylene are optionally interrupted with one or more $-O-$ groups;

R_1 and R_1' are independently selected from the group consisting of:

hydrogen,

15 alkyl,

alkenyl,

aryl,

arylalkylenyl,

heteroaryl,

20 heteroarylalkylenyl,

heterocyclyl,

heterocyclylalkylenyl, and

alkyl, alkenyl, aryl, arylalkylenyl, heteroaryl, heteroarylalkylenyl,

heterocyclyl, or heterocyclylalkylenyl, substituted by one or more substituents

25 selected from the group consisting of:

hydroxy,

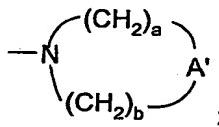
alkyl,

haloalkyl,

hydroxyalkyl,

alkoxy,
 haloalkoxy,
 halogen,
 cyano,
 5
 nitro,
 arylsulfonyl,
 alkylsulfonyl, and
 $-N(R_9)_2$,

or R_1 and R_1' can join together to form a ring of the formula:



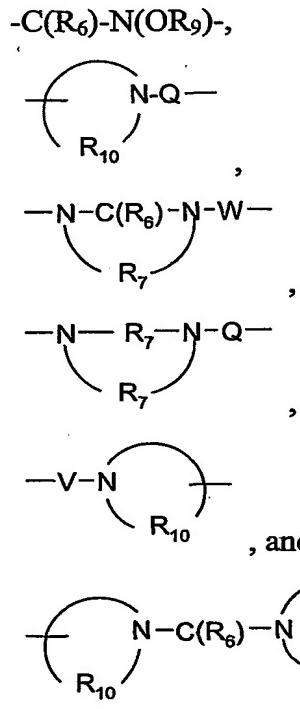
R_2 is selected from the group consisting of:

- R_4 ,
 $-X-R_4$,
 $-X-Y-R_4$, and
 15
 $-X-R_5$;

X is selected from the group consisting of alkylene, alkenylene, alkynylene, arylene, heteroarylene, and heterocyclene, wherein the alkylene, alkenylene, and alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene, or heterocyclene, and optionally interrupted by one or more -O- groups;

20 Y is selected from the group consisting of:

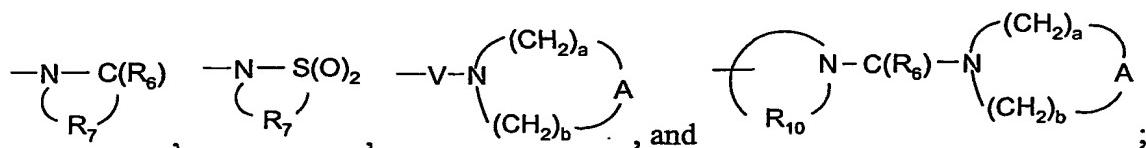
-O-,
 $-S(O)_{0-2}-$,
 $-S(O)_2-N(R_8)-$,
 $-C(R_6)-$,
 25
 $-C(R_6)-O-$,
 $-O-C(R_6)-$,
 $-O-C(O)-O-$,
 $-N(R_8)-Q-$,
 $-C(R_6)-N(R_8)-$,
 30
 $-O-C(R_6)-N(R_8)-$,



5

R_4 is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, oxo;
10
15

R_5 is selected from the group consisting of:



20 R_6 is selected from the group consisting of =O and =S;
 R_7 is C_{2-7} alkylene;

R₈ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;

R₉ is selected from the group consisting of hydrogen and alkyl;

R₁₀ is C₃₋₈ alkylene;

5 A is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, and -N(R₄)-;

A' is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, -N(R₄)-, and -N(Q-R₄)-;

10 Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-, -S(O)₂-, -C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;

V is selected from the group consisting of -C(R₆)-, -O-C(R₆)-, -N(R₈)-C(R₆)-, and -S(O)₂-,

W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂-,

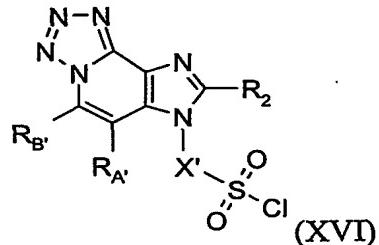
a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7;

15 R_b is selected from the group consisting of halogen, hydroxy, alkyl, alkényl, haloalkyl, alkoxy, and -N(R₉)₂; and

m is 0 to 3;

or a pharmaceutically acceptable salt thereof.

20 33. A compound of the formula (XVI):



wherein:

X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and -CH(R₉)-alkenylene-; wherein the alkylene and alkenylene are optionally interrupted with 25 one or more -O- groups;

R₂ is selected from the group consisting of:

-R₄,

-X-R₄,

-X-Y-R₄, and

-X- R₅;

X is selected from the group consisting of alkylene, alkenylene, alkynylene, arylene, heteroarylene, and heterocyclene, wherein the alkylene, alkenylene, and alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene, or heterocyclene, and optionally interrupted by one or more -O- groups;

Y is selected from the group consisting of:

-O-,

-S(O)₀₋₂-,

10 -S(O)₂-N(R₈)-,

-C(R₆)-,

-C(R₆)-O-,

-O-C(R₆)-,

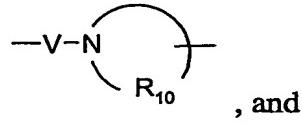
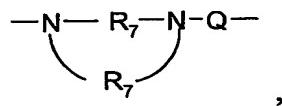
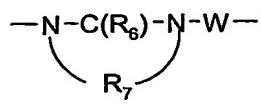
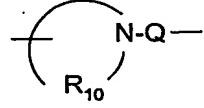
-O-C(O)-O-,

15 -N(R₈)-Q-,

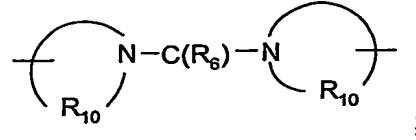
-C(R₆)-N(R₈)-,

-O-C(R₆)-N(R₈)-,

-C(R₆)-N(OR₉)-,

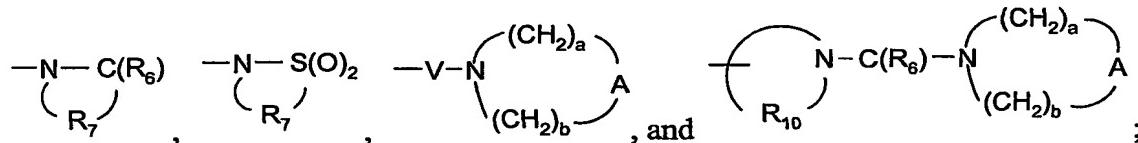


, and



R_4 is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, oxo;

R_5 is selected from the group consisting of:



R_6 is selected from the group consisting of =O and =S;

R_7 is C_{2-7} alkylene;

R_8 is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;

R_9 is selected from the group consisting of hydrogen and alkyl;

R_{10} is C_{3-8} alkylene;

A is selected from the group consisting of $-O-$, $-C(O)-$, $-CH_2-$, $-S(O)_{0-2}-$, and $-N(R_4)-$;

Q is selected from the group consisting of a bond, $-C(R_6)-$, $-C(R_6)-C(R_6)-$, $-S(O)_{2-}$, $-C(R_6)-N(R_8)-W-$, $-S(O)_2-N(R_8)-$, $-C(R_6)-O-$, and $-C(R_6)-N(OR_9)-$;

V is selected from the group consisting of $-C(R_6)-$, $-O-C(R_6)-$, $-N(R_8)-C(R_6)-$, and $-S(O)_2-$;

W is selected from the group consisting of a bond, $-C(O)-$, and $-S(O)_{2-}$;

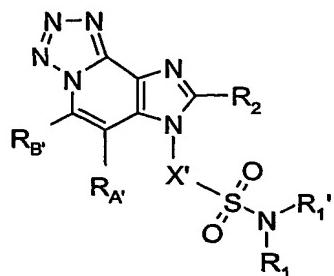
a and b are independently integers from 1 to 6 with the proviso that $a + b \leq 7$;

and

R_A' and R_B' are independently selected from the group consisting of hydrogen, halogen, alkyl, alkenyl, alkoxy, alkylthio, and $-N(R_9)_2$;

or a pharmaceutically acceptable salt thereof.

34. A compound of the formula (XVII):



5

wherein:

X' is selected from the group consisting of -CH(R₉)-, -CH(R₉)-alkylene, and -CH(R₉)-alkenylene-; wherein the alkylene and alkenylene are optionally interrupted with one or more -O- groups;

10

R₁ and R₁' are independently selected from the group consisting of:

hydrogen,

alkyl,

alkenyl,

aryl,

15

arylalkylenyl,

heteroaryl,

heteroarylalkylenyl,

heterocyclyl,

heterocyclylalkylenyl, and

20

alkyl, alkenyl, aryl, arylalkylenyl, heteroaryl, heteroarylalkylenyl,

heterocyclyl, or heterocyclylalkylenyl, substituted by one or more substituents selected from the group consisting of:

hydroxy,

alkyl,

25

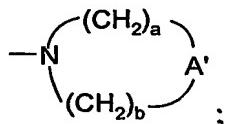
haloalkyl,

hydroxyalkyl,

alkoxy,

haloalkoxy,
 halogen,
 cyano,
 nitro,
 5 arylsulfonyl,
 alkylsulfonyl, and
 $-N(R_9)_2$,

or R_1 and R_1' can join together to form a ring of the formula:



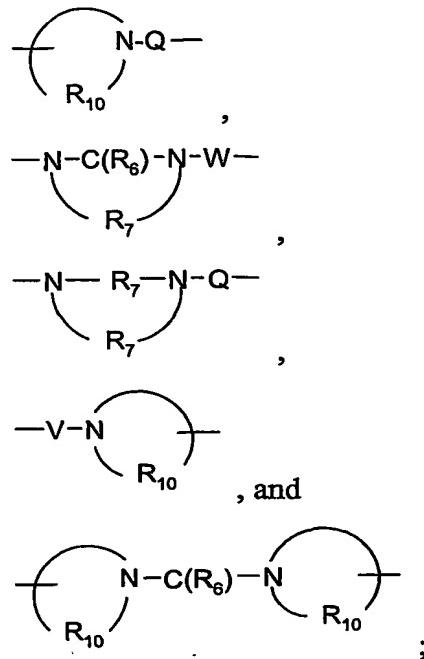
10 R_2 is selected from the group consisting of:

- $-R_4$,
- $-X-R_4$,
- $-X-Y-R_4$, and
- $-X-R_5$;

15 X is selected from the group consisting of alkylene, alkenylene, alkynylene, arylene, heteroarylene, and heterocyclene, wherein the alkylene, alkenylene, and alkynylene groups can be optionally interrupted or terminated with arylene, heteroarylene, or heterocyclene, and optionally interrupted by one or more -O- groups;

Y is selected from the group consisting of:

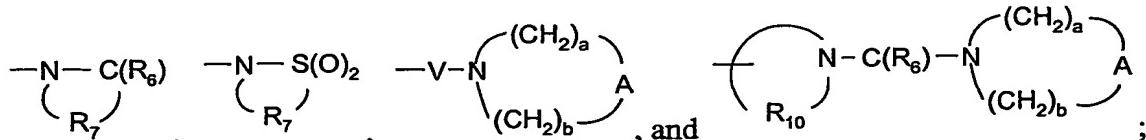
20 : -O-,
 $-S(O)_{0-2-}$,
 $-S(O)_2-N(R_8)-$,
 $-C(R_6)-$,
 $-C(R_6)-O-$,
 25 -O-C(R₆)-,
 $-O-C(O)-O-$,
 $-N(R_8)-Q-$,
 $-C(R_6)-N(R_8)-$,
 $-O-C(R_6)-N(R_8)-$,
 30 $-C(R_6)-N(OR_9)-$,



5

R₄ is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl, wherein the alkyl, alkenyl, alkynyl, aryl, arylalkylenyl, aryloxyalkylenyl, alkylarylenyl, heteroaryl, heteroarylalkylenyl, heteroaryloxyalkylenyl, alkylheteroarylenyl, and heterocyclyl groups can be unsubstituted or substituted by one or more substituents independently selected from the group consisting of alkyl, alkoxy, hydroxyalkyl, haloalkyl, haloalkoxy, halogen, nitro, hydroxy, mercapto, cyano, aryl, aryloxy, arylalkylenyloxy, heteroaryl, heteroaryloxy, heteroarylalkylenyloxy, heterocyclyl, amino, alkylamino, dialkylamino, (dialkylamino)alkylenyloxy, and in the case of alkyl, alkenyl, alkynyl, and heterocyclyl, oxo;

R₅ is selected from the group consisting of:



R₆ is selected from the group consisting of =O and =S;
 R₇ is C₂₋₇ alkylene;
 R₈ is selected from the group consisting of hydrogen, alkyl, alkoxyalkylenyl, and arylalkylenyl;

R₉ is selected from the group consisting of hydrogen and alkyl;

R₁₀ is C₃₋₈ alkylene;

A is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, and -N(R₄)-;

5 A' is selected from the group consisting of -O-, -C(O)-, -CH₂-, -S(O)₀₋₂-, -N(R₄)-, and

-N(Q-R₄)-;

Q is selected from the group consisting of a bond, -C(R₆)-, -C(R₆)-C(R₆)-, -S(O)₂-, -C(R₆)-N(R₈)-W-, -S(O)₂-N(R₈)-, -C(R₆)-O-, and -C(R₆)-N(OR₉)-;

10 V is selected from the group consisting of -C(R₆)-, -O-C(R₆)-, -N(R₈)-C(R₆)-, and -S(O)₂-,

W is selected from the group consisting of a bond, -C(O)-, and -S(O)₂-,

a and b are independently integers from 1 to 6 with the proviso that a + b is ≤ 7;

15 R_{A'} and R_{B'} are independently selected from the group consisting of hydrogen, halogen, alkyl, alkenyl, alkoxy, alkylthio, and -N(R₉)₂; or a pharmaceutically acceptable salt thereof.

20